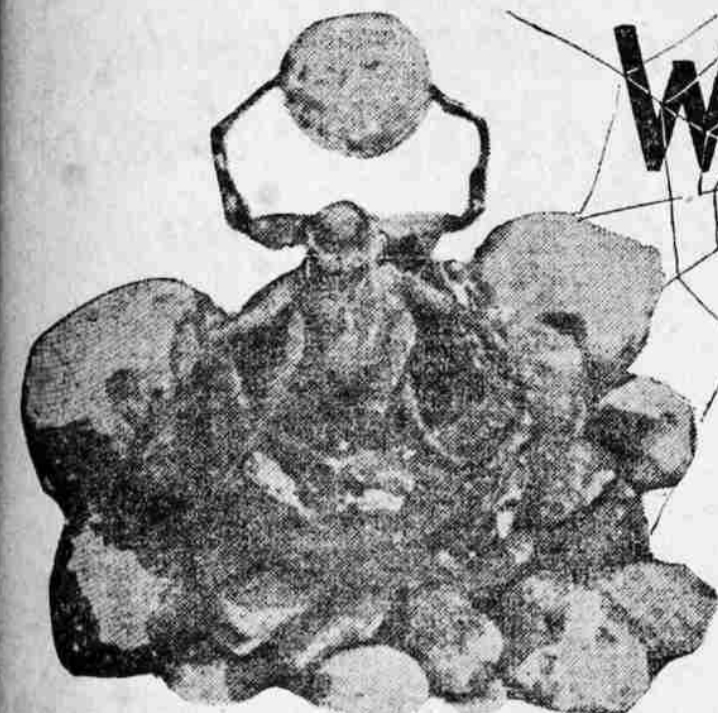


# Will The Spider Inherit Our Earth?



A Remarkable Photograph of the Spider of Narbonne Holding Her Eggs Up to the Sun to Hatch.

**Man Must Give Way to Some Other Creature, Says H. G. Wells, the English Philosopher, and Maeterlinck, the Belgian, Suggests the Hideous Insects, "Born of a Demented Comet," as Man's Successors**

THE intelligence of the insects becomes a more fascinating and disturbing problem the more it is studied.

And now comes the suggestion that the insects, and most probably the spiders, are destined to supplant man as the rulers of the earth. The suggestion gains support from many scientific arguments. A very remarkable book, "The Life of the Spider," by J. H. Fabre, a French naturalist of surpassing genius, has just been published by Dodd, Mead & Co.

It contains a long preface by Maurice Maeterlinck, the philosophic writer and biographer of the bee. He advances the idea strongly that the spider may be destined to be our successor on earth. From Maeterlinck's arguments and Fabre's observations it appears that this insect is in many ways much more fitted to rule the earth than man.

The spider is absolutely ruthless. It possesses a poison with which it can kill or paralyze any creature at will. It has business industry and knows neither laziness nor intemperance. It sustains life with great economy. It is never led astray by its passions. It is a superb architect and craftsman. In its ability to float about on a line of web it shows itself to have learnt the secret of the aeroplane long before man.

Having eight legs and eight eyes, the spider is physically far superior to man.

From the construction of its web there is reason to believe that it is a superb mathematician and geometer. It appears to have partly solved the problem of obtaining energy directly from the sun, for the young are kept alive in that way for five or six months. Notwithstanding the mental capacity of the spider, it is a repulsive creature. Man has an instinctive antipathy to it. To M. Maeterlinck the malignance of the spider suggests that it is a creature from another planet, where life is wholly alien to ours. The spider's matrimonial relations fill him with horror.

"The marriage customs," he says, "are dreadful and contrary to that which happens in every other world, here it is the female of the pair that stands for strength and intelligence and also for cruelty and virility, which appear to be their inevitable consequence. Almost every wedding ends in the violent and immediate death of the husband. Often, the bride begins by eating a certain number of suitors."

"The archetype of these fantastic unions could be supplied by the Languedocian scorpions, who, as we know, carry lobster-like claws and a long tail supplied with a sting, which is extremely dangerous. They have a prelude to the festival in the shape of a sentimental stroll, claw in claw, then, motionless, with fingers still gripped, they contemplate each other steadily, interminably; day and night pass over their ecstasy while they remain close to face, petrified with admiration."

"When the foreheads come together and touch; the mouths—if we can give the name of mouth to the monstrous orifice that opens between the claws—are joined in a sort of kiss; after which the union is accomplished, the male is transfixed with a mortal sting and the terrible spouse crushes and gobbles him up with gusto."

Another recent book, "The Study of the Future," by H. G. Wells, (Published by A. W. Hueston, New York), lends strength to the theory that the spider may be man's successor. Mr. Wells argues very forcibly that man cannot be the ultimate form of life on earth.

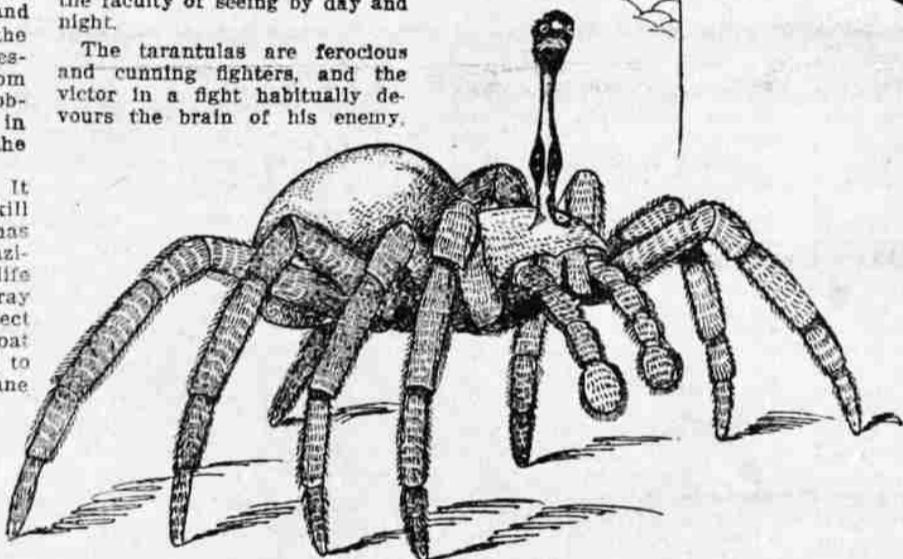
In "The Life of the Spider," M. Fabre gives us a complete biography of the black-bellied tarantula, the most terrible of all the spiders. Here it should be noted that the author always speaks of the spider as "she." She builds a wonderful underground tunnel for a dwelling. At four or five inches from the surface it leads at an obtuse angle. It is at the end of the tunnel that the tarantula presents herself as a vigilant sentry, watching for victims and enemies.

This arrangement lends itself admirably to the necessary extension of the legs at the moment when the prey is to be seized. The shaft is composed of little bits of wood joined together by clay with perfect strength and symmetry.

The building is upholstered with a silken fabric woven by the tarantula's spinnerets. The ability to build these houses is found only in individuals that have reached a certain intellectual development.

M. Fabre shows that the tarantula is very cleanly and brushes away all the remains of her victims. She has the faculty of seeing by day and night.

The tarantulas are ferocious and cunning fighters, and the victor in a fight habitually devours the brain of his enemy.



The Stalk-eyed Spider—Nothing but a Great Mechanical Body Moved by an Alert, Cruel Intelligence Poised High Above It.

a custom like that of the human head hunters of Borneo.

"One day," says the author, "I picked out two full grown and very powerful males and put them together in a wide jar. After walking around the arena several times to try and avoid each other, they made up their minds to fight."

"I saw them, to my surprise, take their hind legs, so as mutually to present the shield of their chests to each other. After watching them face to face like that for two minutes, during which they had provoked each other by glances, I saw them fling themselves upon each other, twisting their legs together and struggling to bite one another with their fangs."

"Whether from fatigue or from convention, the combat was suspended. There was a few seconds truce and each athlete moved away and resumed his threatening posture. This circumstance reminded me that in the strange fights between cats, there are also suspensions of hostilities."

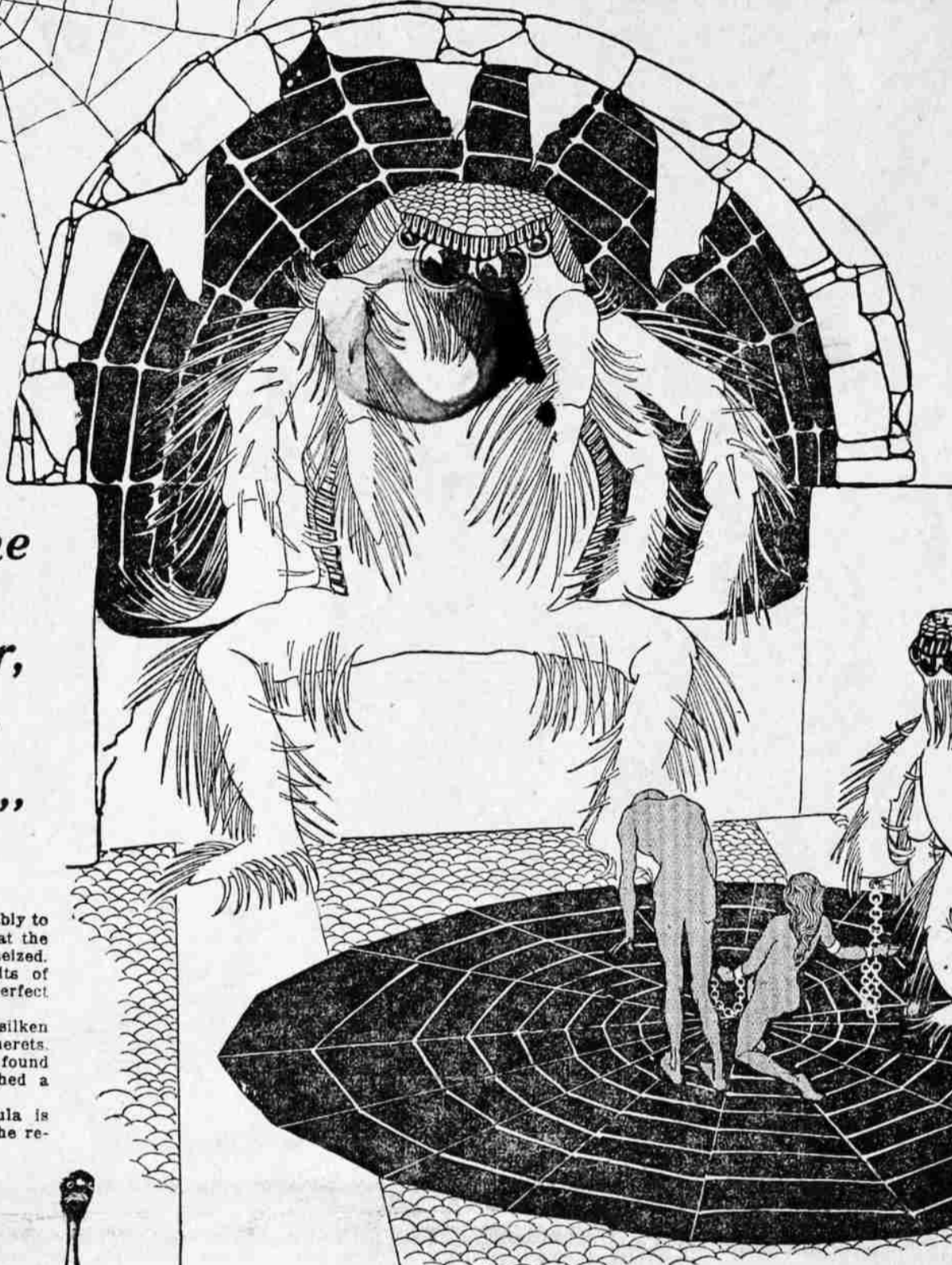
"But the contest was soon renewed between my two tarantulas with increased fierceness. One of them, after holding victory in the balance for a while, was at last thrown and received a mortal wound in the head. He became the prey of the conqueror, who tore open his skull and devoured its brains."

Every spider mixes a poison that is exactly suited for the purpose in view. The tarantula, which does not weave cords to bind its victims, needs a poison that will kill instantly, or the victim may escape or do damage to the home. Even the rattlesnake's poison does not kill so quickly. It takes hours to accomplish what the tarantula does in less than a second.

The tarantula kills by preference at night or in the darkness, for it can then take its victim entirely by surprise. M. Fabre hung a fat and powerful carpenter bee before the burrow of a Narbonne tarantula until the latter rushed out and killed the bee.

"The tarantula's fangs are planted in the nape of the neck," says M. Fabre. "The assassin has the knowledge which I suspected. She has made for the essentially vital centre. She has stung the insect's cervical ganglia with her poison fangs. In short, she has bitten the only point where a lesion produces sudden death."

This tarantula's poison only produced paralysis in the leg of a bird, but the paralysis was permanent and ended in death twelve hours later. A mole bitten on the nose died in thirty-six hours.



"Will life in the dim future be like this? Giant spiders ruling the world, and the pitiful remnants of mankind begging for life from their hideous conquerors?"

quite unconcerned when some of them fell off and were killed.

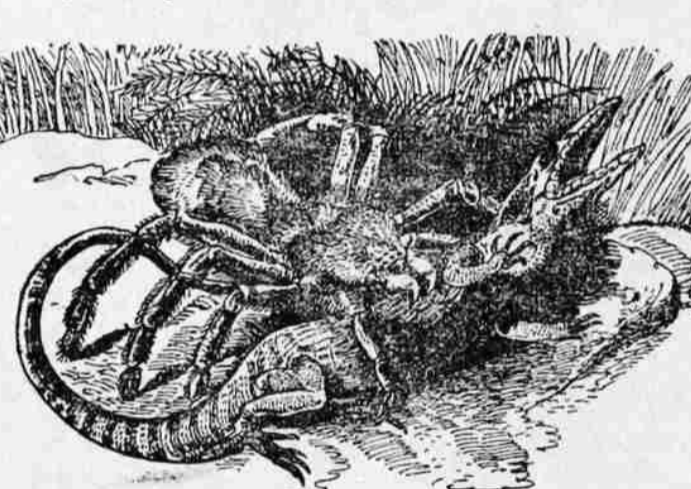
The naturalist proved the astonishing fact that the individuals of this family would adopt themselves to their environment, building houses of a kind their

race had never known before. He found, for instance, that they constructed houses of pebbles, when forced to do so, although they had always worked in soft earth.

The tarantula puts pieces of her prey on the roof to be baked and preserved by the sun.

One of the mysteries of spider life is that the young of the tarantula and other species, while they are on the mother's back for months, take no food and obtain nothing from the mother's body. M. Fabre advances the interesting theory that they live directly by solar energy, thus suggesting that the spiders have solved a problem which is regarded as the ultimate goal of human science.

"Instead of being served up through the intermediary of food and passing through the ignominious circuit of gastric chemistry, could not this solar energy pene-



A Great West Indies Spider Paralyzing a Lizard with Its Poison. The Spider's Extraordinary Knowledge of Poisons Is One of the Things That Qualifies It as Man's Successor.

trate the animal directly and charge it with activity, even as the battery charges an accumulator with power?" M. Fabre asks, "Why not live on sun, seeing that after all, we find nought but sun in the fruits which we consume?"

The banded epeira is the handsomest of the southern French spiders. On her fat belly, a mighty silk warehouse, nearly as large as a hazel nut, are alternate yellow, black and silver sashes.

The epeira constructs a magnificent radiating upright web. In the lower part of the web, starting from the centre, a wide opaque ribbon descends zigzag-wise across the radii. This is the epeira's trademark. The flourish of an artist initialling his creation.

"That the spider feels satisfied when, after passing and re-passing from spoke to spoke, she finishes her spiral is beyond a doubt," comments M. Fabre. "The work achieved insures her food for a few days to come."

Describing the artistic taste and architectural skill of this spider, the author says:

"The epeira ends her web with a dead white angular flourish; she ends her nest with brown mouldings; which run down irregularly from the marginal junction to the bulging middle. For this purpose she makes use for the third time of a different silk; she then produces silk of a dark hue, varying from russet to black. The spinnerets distribute the material with a wide longitudinal swing from pole to pole, and the hindlegs apply it in capricious ribbons."

M. Fabre has observed that the epeira is ambidextrous, a valuable quality in the struggle for existence to which man has so far aspired in vain. In whatever direction she turns, she uses the nearest of her eight legs with the same dexterity.

The spider uses her web in some mysterious way as a telegraph wire. When a fly or other possible prey touches the most distant part of the web she hastens to the spot, but if the structure is disturbed by a man she hides herself. There is reason to believe that the web carries to her news of just what is happening on it.

After showing that the spider is a skilled aeroplanist, an architect, a handler of all sorts of tools and implements of precision, M. Fabre goes on to adduce evidence from the form of the web that this insect possesses a knowledge of geometry, mathematics and logarithms.

"Taken as a whole," he says, "the repetitive edifice consists of a series of cross-bars, intersecting the several radiating lines obliquely at angles of equal value."

"By this characteristic we recognize the 'logarithmic spiral.' Geometricians give this name to the curve which intersects obliquely at angles of unvarying value all the straight lines or 'radii vectors' radiating from a centre called the pole. The epeira's construction, therefore, is a series of cords joining the intersections of a logarithmic spiral with a series of radii. It would become merged in this spiral if the number of radii were infinite, for this would reduce the length of the rectilinear elements indefinitely and change this polygonal line into a curve."

## My Secrets of Beauty By Mme. Lina Cavahieri. The Most Famous Living Beauty

### No. 219---Essential Exercises

I KNOW that every time the word "exercise" is mentioned one feels a bit weary. We are so tired of systems of exercises, of pursuing the treadmill of "Right one, left one, up, down, breathe," etc. And I think that especially in the case of a woman of frail physique the matter of exercise is overdue.

But there is something of which no one ever tires. That is beauty. And for the culture and preservation of beauty there must be exercise. What exercise, and how much of it, is largely an individual question, as is food. One woman requires for the maintenance of her strength and beauty three full meals a day. Some need to eat often and little, and others get on comfortably and thrive on two meals a day, with possibly a glass of milk or an apple or orange between those meals.

But as everyone needs some fruit, some iron-containing foods, as spinach and string beans and beets, plenty of water and some bulky cereals, as corn and wheat, so there

are essential exercises. Walking is one of these.

Count that day unwisely spent that does not include a walk, the longer the better. But mark that I said a walk, not a dawdle, nor a saunter. One should walk briskly, to assure deeper breathing than usual. According to your strength and the time at your disposal let your walk be. English women like a ten-mile daily trudge. American women think two or three miles enough. But the English women have the better complexions. On the other hand the women of America expend more nervous energy in their conversation, their work and play, and because of that extra outgo of nerve force it may be well to expend less energy in walking. The rule of how many miles you should walk a day you must make for yourself, letting circumstances govern, but having in mind that there should be one walk a day to keep your skin clear, your eyes bright and your spirits normally high.

Another exercise I consider essential to most women and particularly to those of America, who are inclined to a thickening of the middle of the figure, especially at middle life. That is the twisting of the trunk on the hips. Turning from right to left, and from left to right, keeping the body erect all the while will keep the muscles of the back firm, reduce the flesh in that part of the body and reduce the abdomen.

A third essential exercise has no less ordinary name than squatting. Bending the knees and sinking to and rising from a sitting posture several times every day will keep the body supple.

These, with deep inhalations and exhalations every day, the sweeping the lungs free from impure air and filling them with fresh, clean air, should keep one in good condition, so far as the need of exercise goes. Special exercises for special cases are well known. These four should meet the average needs, and are so necessary that I have named them the essential exercises.

